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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,372	08/20/2003	Patrick H. Buffet	RPS920030106US1	6420

47052 7590 11/17/2004

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EXAMINER	
THAI, LUAN C	

ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/644,372	BUFFET ET AL.	
	Examiner	Art Unit	
	Luan Thai	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-24 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-24 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 August 2003 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 8/20/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The Information disclosure Statement filed on 01/19/99 has been considered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first pair of conductors (***two conductors***) which has the height to be substantially shorter than the height of the second pair of conductors (***two conductors***), as recited in claims 2-3, 8-9 and 19-20 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4-8, 10-19 and 21-24, are rejected under 35 U.S.C. 102(e) as being anticipated by Arima et al (6,479,758).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1, 4-7 and 11-17, Arima et al (see specifically figures 1-2 and 17A attached) disclose a multi-layer semiconductor chip package, comprising:

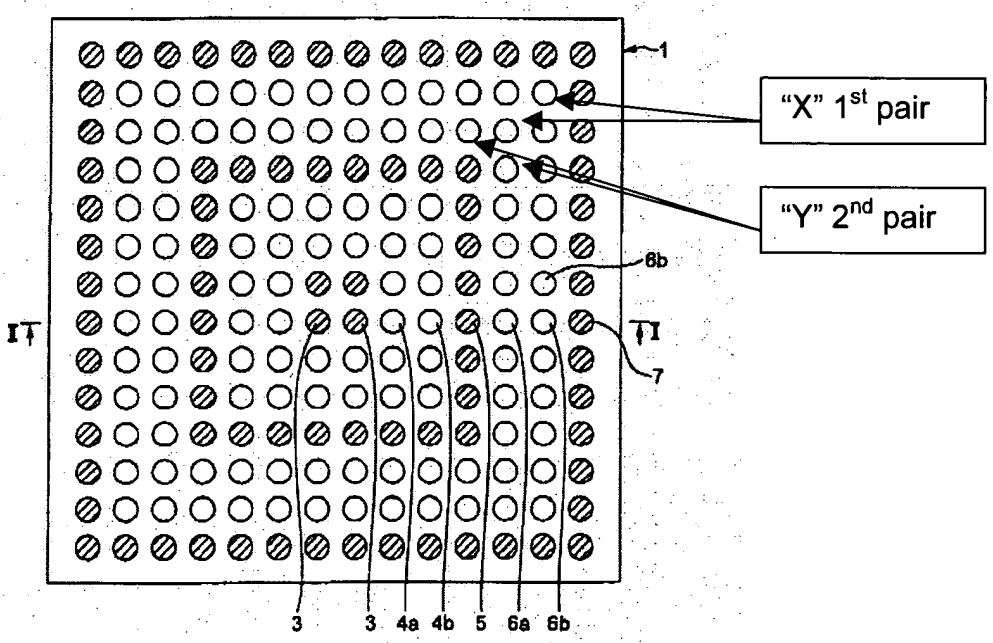

FIG. 1

a first pair of conductors (X) for carrying a first signal in a layer of a carrier (205 of figure 17A) having a similar terminals arrangement as shown in figure 1 (Col. 8, lines 8-50); a second pair (Y) of conductors for carrying a second signal adjacent to the first pair of conductors in the layer, wherein the second pairs of conductors (Y) is positioned to be orthogonal to the first pair of conductors (X) and equidistant to each conductor in the first pair of conductors (X) and wherein the layer is near an interface between the carrier and a chip (see figure 17A). By forming the package as described above, even if signal wiring

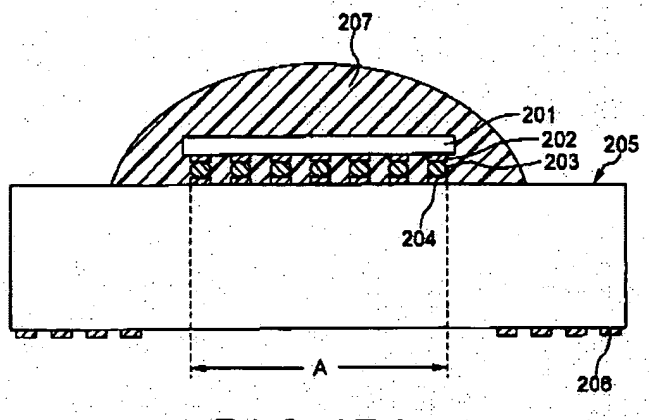

FIG. 17A

are closely arranged, it is possible to prevent cross-talk from occurring and it is possible to prevent the size from (see the Abstract and Col. 2, lines 1-4, Col. 6, lines 16-25, Col. 8, lines 1-7, Col. 9, lines 41-44, Col. 10, lines 5-9, and Col. 12, lines 42-45).

Regarding claims 18 and 21-24, it should be noted that although claims 18 and 21-24 are "method claims", the method steps consist of the broad steps of "providing...., positioning.....etc."; therefore, these steps would be inherently satisfied by the apparatus of the reference as modified.

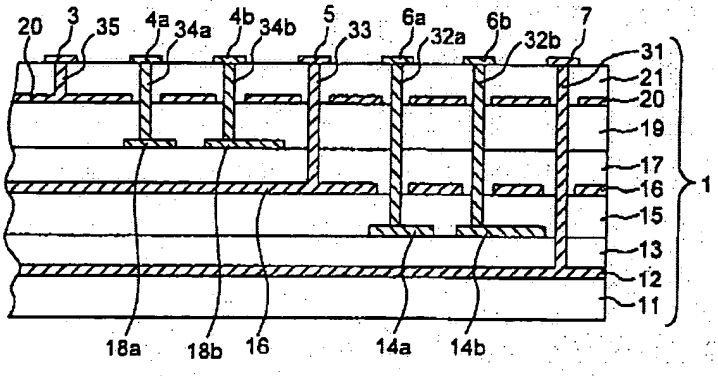

FIG. 2

Regarding claims 2, 8, 10 and 19, Arima et al further teach a height (e.g., 34a-34b in figure 2) of the 1st pair "X" being substantially shorter than a height (e.g., 32a-32b in figure 2) of the 2nd pair "Y".

5. Claims 1, 4-5, 11, 13, 15-16, 18 and 21-22, are rejected under 35 U.S.C. 102(e) as being anticipated by Stearns et al (6,215,184).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1, 4-5, 11, 13, and 15-16, Stearns et al (see specifically figure 4 attached and Col. 2-3) disclose a multi-layer semiconductor chip package, comprising:

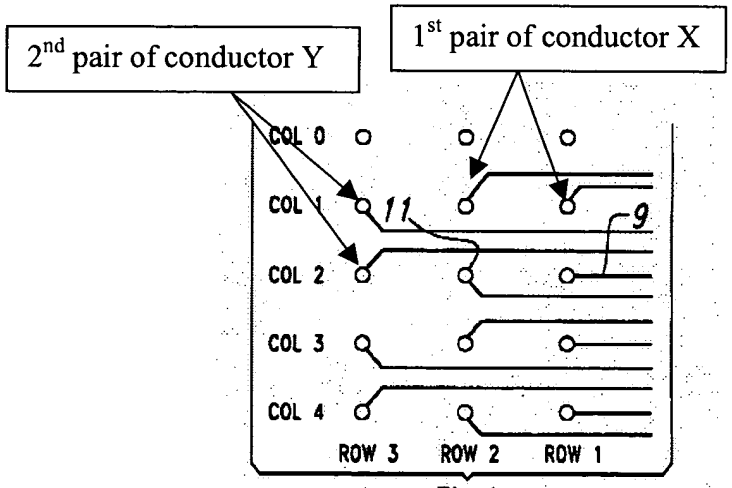

Fig.4

a first pair of conductors (X) for carrying a first signal in a layer of a carrier (1) of the package; a second pair (Y) of conductors for carrying a second signal adjacent to the first pair of conductors in the layer, wherein the second pairs of conductors (Y) is positioned to be orthogonal to the first pair of conductors (X) and affect each other evenly. Stearns

et al. teach that the advantages of the layout described above are: improved electrical performance, suitability for high frequency applications and flexibility to use nearly all signal traces as differential pairs or single ended lines and reduced cross talk (see Col. 2, lines 56+).

Regarding claims 18 and 21-22, it should be noted that although claims 18 and 21-22 are "method claims", the method steps consist of the broad steps of "providing...., positioning.....etc."; therefore, these steps would be inherently satisfied by the apparatus of the reference as modified.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-3, 7-11, 14-16, 18-21 and 24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (6,657,310).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1-3, 7-11, and 14-16, Lin discloses (see specifically figures 10) a multi-layer semiconductor chip package, comprising: a first pair of conductors, which are the vertical wirings 131 connected to bumps 101-102, for carrying a first signal in a layer of a carrier (130) of the package, wherein the layer is near an interface between the

carrier (130) and a chip (100); a second pair of conductors, which are the vertical wirings 131 connected to bumps 103-104, for carrying a second

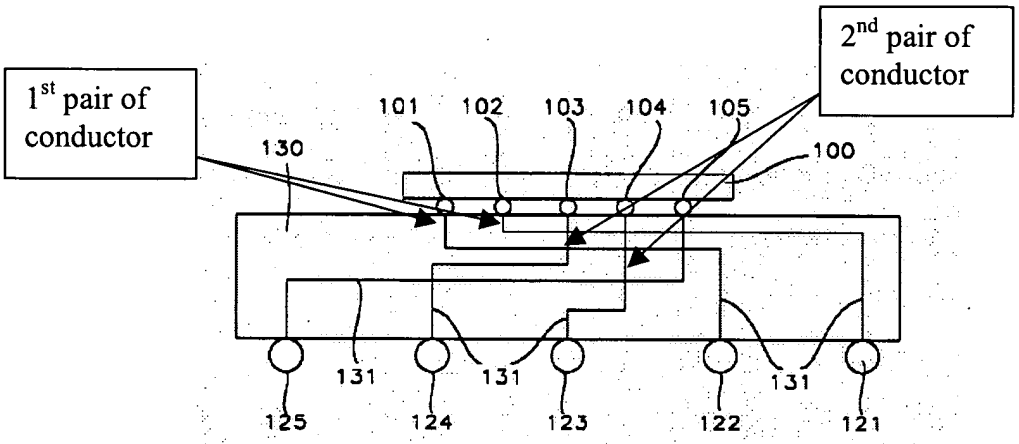

FIG. 10

signal adjacent to the first pair of conductors in the layer, wherein a height of the first pair of conductors (e.g., the vertical wirings 131 connected to bumps 101-102) is substantially shorter than a height of the second pair of conductors (e.g., the vertical wirings 131 connected to bumps 103-104), and wherein the height of the second pair of conductors in a subsequent layer (e.g., the vertical wiring 131 connected to contact points 123-124) of the carrier is shorter than the height of the first pair of conductors in the subsequent layer (e.g., the vertical wiring 131 connected to contact points 121-122). Thus, all the claimed structure of the invention has been taught. Lin does not explicitly disclose cross-talk between the first and second pairs of conductors being substantially minimized.

Since applicant's claimed structures in claims 1-3, 7-11, 14-16, 18-21 and 24 do not distinguish over the Lin reference, the claimed of "cross-talk being substantially minimized" could have been included in Lin'structure.

Regarding claims 18-21 and 24, it should be noted that although claims 18-21 and 24 are "method claims", the method steps consist of the broad steps of "providing...., positioning.....etc."; therefore, these steps would be inherently satisfied by the apparatus of the reference as modified.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 6:45 AM - 4:15 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luan Thai
Primary Examiner
Art Unit 2829
November 12, 2004